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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WHITTINGTON, KENNETH	

ART UNIT	PAPER NUMBER
2862	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,285	HAASE, BJOERN	
	Examiner	Art Unit	
	Kenneth J. Whittington	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/26/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because:

(1) in lines 1, 5 and 8, it contains terms that can be implied, i.e., "The invention relates", "According to the invention" and "The present invention also relates".

(2) in line 5, the use of legal phraseology, i.e., "means" is used.

Correction is required in all instances. See MPEP § 608.01(b).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the height offsets as recited in claim 11, the bobbin attached to the printed circuit board as recited in claim 11, the hand held measuring device as recited in claim 13 and the tool device, either the drilling or chiseling tool, as recited in claim 14 must be shown or the features canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the

filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 2 is objected to because of the following informalities: "the at least on receive coil" lacks antecedent basis. Appropriate correction is required.

Claim 4 is objected to because it introduces jumpers or switching means in the claim. The specification only deals with a single type of switching means in each embodiment. This claim requires at least two. Amending this claim such that the "electrical switching means comprises jumpers with switching means located …" would overcome this objection.

Claims 15-19 are objected to because while the claim a method, there are no recited method steps. Thus, the claim appears purely a structural claim and will be examined as such. Appropriate correction is required to amend the claim into either a method claim or a product claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "effective number of turns" in claims 1 and 2 is a relative phrase which renders the claim indefinite. The term "effective" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claim 5, where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52

USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "solder bridges" in claim 5 is used by the claim to further define a switching means, while the accepted meaning of a solder bridge is a permanent bridge/conductor between two locations. Switches generally allow for circuit making and breaking alternatively. The term is indefinite because the specification does not clearly redefine the term and such term directly contradicts a switch.

Regarding claim 18, there is an internally inconsistent scenario in with reference to the claim from which it depends. Claim 17 allows for n=1 compensation modules and then claim 18 recites voltage differences between n and n-1 modules. If the method only requires a single module, it cannot have these differences between modules.

Regarding claim 18 again, the claim introduces but does not define m' in the equations listed. This variable is not defined in the claims nor in the specification, thus it is unclear the scope of this claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7, 8, 11 and 13-19 rejected under 35 U.S.C. 102(b) as being anticipated by Greenwood et al. (GB117507), hereinafter Greenwood.

Regarding claim 1, Greenwood discloses device for locating metallic objects, with at least one transmit coil and at least one receive turn system (See Greenwood FIGS. 1 and 5, items 5, 6 a and b), which are inductively coupled to one another, wherein electrical switching means are provided, which make it possible to vary the effective number of turns of the at least one receive turn system (See FIG. 5, item 7).

Regarding claim 2, Greenwood discloses the effective number of turns of the at least one receive coil is variable by

connecting or disconnecting electrical conductor modules (See FIG. 5, items 5 and 7, note number of turns is variable).

Regarding claim 3, Greenwood discloses the switching means are located between turns of a first receive coil and turns of a second receive coil (See FIG. 5, items 7 and 5).

Regarding claim 7, Greenwood discloses at least two receive coils (112, 114; 212, 214) are located coaxially relative to each other (See FIGS. 1 and 5, items 5, 6, a and b).

Regarding claim 8, Greenwood discloses the receive coils located in a plane (See FIGS. 1 or 5, note position of coils 5 and b).

Regarding claim 11, Greenwood discloses the transmit coil located in a plane which is positioned with a height offset and is parallel to the at least one receive coil (See FIGS. 1 and 5, note position of coils 6 and a).

Regarding claim 13, Greenwood teaches a measuring device with a device as recited in claim 1 (See discussion of claim 1 above).

Regarding claim 14, Greenwood discloses a tool device with a device as recited in claim 1 (See discussion of claim 1 above).

Regarding claim 15, Greenwood discloses a method for operating an inductive compensation sensor, with at least one transmit coil and at least one receive turn system, with which the adjustment of a voltage U induced in a receive coil takes place by connecting an adjustment turn system to the turns of the receive turn system, this adjustment turn system including one or more compensation modules (See Greenwood FIG. 5, note adjustment turn system item 7 for loop modules of coil 5).

Regarding claim 16, Greenwood discloses for each compensation module, it is possible to switch between m different alternative configurations of the electrical contacting (See FIG. 5, note each loop of item 5 gives a difference configuration).

Regarding claim 17, Greenwood discloses the adjustment turn system is composed of at least n (n=1 . . . N) independent compensation modules KMn, each having m(n) (m(n)=1 . . . M(n)) different configurations, in which a voltage change ΔUn,m is induced, with $\Delta U=(U(n,m)-U(n,m+1))$, in the receiving branch of the compensation sensor by selectively switching between individual configurations m of a compensation module KMn (See FIGS. 1 and 5, note items 7, 5, 6, a and b and disclosure related thereto).

Regarding claim 18, as best understood, Greenwood discloses the compensation modules KMn are configured such that the voltage change ΔUn,m differs from the voltage difference ΔUn-1,m, with ΔUn-1,m=(U(n-1,m')-U(n-1,m'+1)), of compensation module KMn-1 by the factor M(n-1), with an ordinal number n reduced by one (See FIGS. 1 and 5, note items 7, 5, 6, a and b and disclosure related thereto).

Regarding claim 19, Greenwood discloses wherein binary coding with M(n)=2 is used for the compensation modules KMn of the adjustment turn system, so that the relationship ΔU=(U(n,1)-U(n,2))=2*(U(n-1,1)-U(n-1,2)) applies (See entire disclosure of Greenwood, note also that this claim is merely an intended use or operation of a generic apparatus of claim 17. Because Greenwood discloses the features of the generic apparatus, it discloses the intended use).

Claims 1-4 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson (US7167691).

Regarding claim 1, Nelson discloses a device for locating metallic objects, with at least one transmit coil and at least one receive turn system (See Nelson FIGS. 1 and 2b, note separate transmitter and receivers), which are inductively

coupled to one another, wherein electrical switching means are provided, which make it possible to vary the effective number of turns of the at least one receive turn system (See FIGS. 5-7, note switches 52 between turns).

Regarding claim 2, Nelson discloses the effective number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules (See FIGS. 5-7, note switches 52 shown).

Regarding claim 3, Nelson discloses the switching means are located between turns of a first receive coil and turns of a second receive coil (See FIG. 5, note switches 52).

Regarding claim 4 Nelson discloses jumpers with switching means are located between receive coil turns with a different radius Ra or Rb (See FIGS. 5-7, note switches between different radii coil loops).

Regarding claim 8, Nelson discloses the receive coils located in a plane (See FIGS. 5-7, note coils).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood in view of Shaeffer et al. (US6664482), hereinafter Shaeffer. Regarding claim 5, Greenwood teaches using switches to make proper connections following calibration of its device, but not using a solder bridge as a connection. Shaeffer teaches using a solder bridge instead of a switch (See Shaeffer col. 1, lines 9-20). It would have been obvious at the time the invention was made to use the solder bridge instead of the switch in the apparatus of Greenwood. One having ordinary skill in the art would do so to provide a reliable and secure connection (See Shaeffer col. 1, lines 9-20).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Candy (US6686742). Regarding claim 6, Nelson teaches the features of claim 1 as noted above and further the use of reed switches or IC switches, but not the switching means being semiconductor switches. Candy teaches using semiconductor switches (See Candy col. 3, lines 6-

20). It would have been obvious at the time the invention was made to incorporate any of the noted switches into the apparatus of Nelson. One having ordinary skill in the art would do so because all such switches are equally available for use in metal detectors for closing and opening circuits as taught in Nelson and Candy in the noted portions.

Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood in view of Shaeffer as applied to claim 5 above, and further in view of Weber (US4486712). These claims teach the features noted above with respect to claim 5, but not the coils being printed circuit board coils. Weber teaches a metal detector design wherein the coils may be contained on a printed circuit board (See Weber col. 6, lines 57-68). It would have been obvious at the time the invention was made to incorporate the coils onto a printed circuit board. One having ordinary skill in the art would do so to provide a compact coil design (See Weber col. 6, lines 57-68).

Regarding claim 12, this combination teaches the transmit coil is installed to a bobbin, which is attached to the printed circuit board (See Greenwood FIG. 2, note that if receive coil 5 is attached to printed circuit board, the transmit coil 6 would

be attached to bobbin 13 which is attached to the receive coil assembly via item 15).

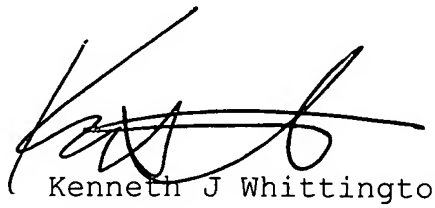
Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Candy as applied to claim 6 above, and further in view of Weber. Nelson in view of Candy teaches the features of claim 6 above, but not a printed circuit board assembly. Weber teaches a metal detector design wherein the coils may be contained on a printed circuit board (See Weber col. 6, lines 57-68). It would have been obvious at the time the invention was made to incorporate the coils onto a printed circuit board. One having ordinary skill in the art would do so to provide a compact coil design (See Weber col. 6, lines 57-68).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Kenneth J Whittington
Examiner
Art Unit 2862

kjw